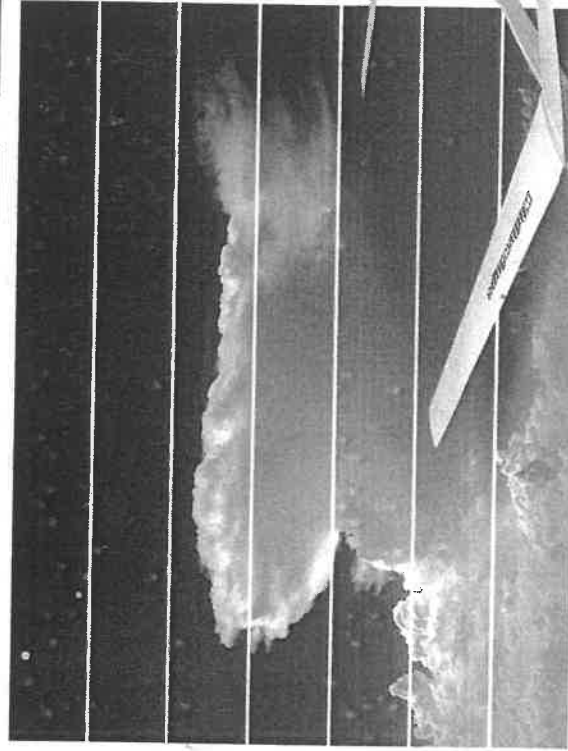
EXCELLENT PAPER AIRPLANES · COLLECTION SERIES

Whitewings®

OFFICIAL EDITION
• 15 carefully selected models

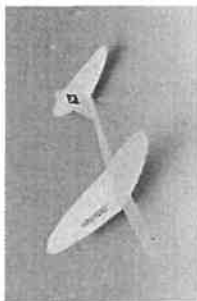
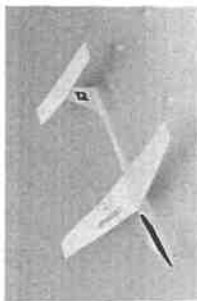
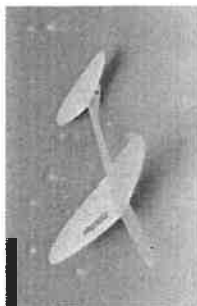
EXCELLENT
15 PAPER AIRPLANES
COLLECTION SERIES

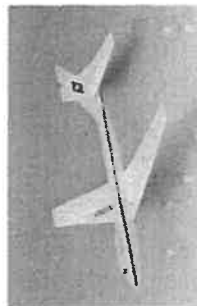
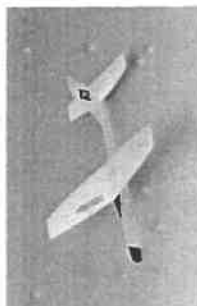
DESIGNED BY
DR. Y. NINOMIYA

Dr. Yasuaki Ninomiya was awarded the Grand Prize in both the flight time and distance divisions at the First International Paper Airplane Contest (Pacific Basin Division) in San Francisco in 1967 and served as a judge in the Second Great International Paper Airplane Contest in Seattle in 1985.

Whitewings®

EXCELLENT PAPER AIRPLANES

Assembly Kit for 15 Models

■ **Kit includes the following gliders**

Racer 512 Finch

Racer 513 Meadowlark

Racer 514 Goose

Racer 515 Robin

Racer 516 Mockingbird

Racer 517 Ptarmigan

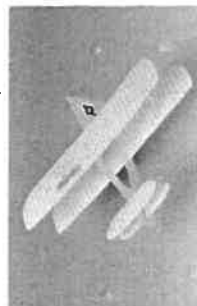
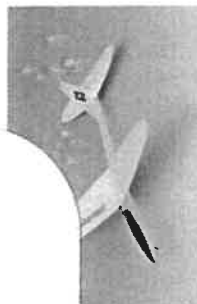
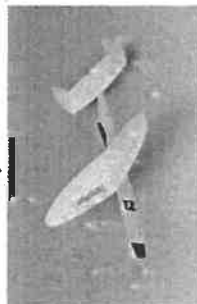
Racer 518 Cardinal

Light Plane 301 Flycatcher

Light Plane 302 Oriole

Light Plane 303 Bluebird

Light Plane 304 Thrasher

Boeing 747

Wright FLYER

WINNIE MAE(Lockheed VEGA)

General Dynamics
F-16 FIGHTING FALCON

■ **Instruction booklet**
(60 pages)
Assembly, flight,
and design directions

■ **Also included:**
Weights
Rubber band
Catapult
All necessary parts

(GLUE NOT INCLUDED)

0 42594 15011 2

Stock No. AG1501

AG INDUSTRIES, INC.
3832 148TH AVE., N.E.
REDMOND, WA 98052 U.S.A.
PHONE: (206) 885-4599
FAX: (206) 885-4672

FLYING FUN FOR EVERYONE

When you fly your plane please keep the following in mind.

***Launch your plane in a large area away from people who might get hit.**
***Don't fly your plane where cars will be passing by.**

AG CO., LTD.
11-16, 1-CHOME, NISHINAKAJI
YODOGAWA-KU, OSAKA, JAPAN
PHONE: 06-303-8001
DESIGN PATENT PENDING
PRINTED IN JAPAN

HOW TO BUILD "WHITEWINGS"

part of the wing resembles a so-called saddle shaped surface in math, I call this type of wing a MOST (Modified Saddle Type) wing. It is constructed as follows.

CAUTION 1
The parts numbers used below are for the Racer 512. As the part numbers and dihedral angle may change according to the model, be careful when you use these instructions for other models.

CAUTION 2
When constructing the Racer 518, start with step 0.

■ Glue parts together in the order indicated.

1. Glue parts ⑩ and ⑪ to the undersides of parts ⑧ and ⑨ respectively. When dry, cut off the protruding portions.

Dots are towards front

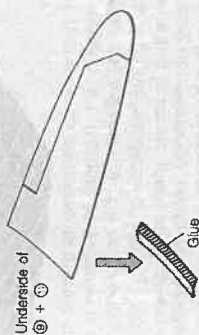
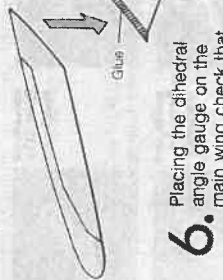
2. Using a ruler along the center line, fold part ⑫ from the center line to make a 15° angle on both sides. Then curve it carefully with your fingers to fit the curved edge of the fuselage top where the main wings are to be attached.

Arrow points forward

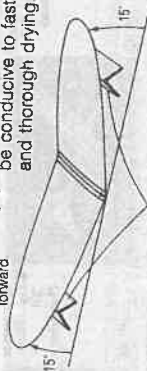
Dots are towards front

4. Apply glue on half of the underside of ⑫ and glue onto ⑨ + ⑪. (The arrow should point towards the dot.)

Underside of ⑨ + ⑪

Glue

5. In the same manner as in 4 attach ⑧ + ⑩ to the other side of ⑫.

6. Placing the dihedral angle gauge on the main wing check that the dihedral angle is 15°.

7. Putting folded stands under the main wing will be conducive to fast and thorough drying.

Arrow points forward

Folded paper stands

0. Cut parts ⑧ and ⑨ along the solid lines up to the dashed lines. Then placing a ruler along the dashed line, bend the resulting strips slightly upward to make folding creases.

instructions on page 36.

1. Fold all tabs outward.

2. Glue ① through ⑤ together.

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑭.

5. Glue the horizontal stabilizer ⑬ to the fuselage.

7. Glue the main wing firmly to the fuselage.

Arrow points forward

8. Place the dihedral angle gauge on the main wing to make sure the dihedral angle is 15°.

9. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑥ and ⑦ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑥ and ⑦ securely to the fuselage.

Camber the wings slightly.

FINISHING TOUCHES
- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT
- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑤ together.

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑭.

5. Glue the horizontal stabilizer ⑬ to the fuselage.

6. following the assembly instructions on page 36.

7. Glue the main wing firmly to the fuselage.

Arrow points forward

Arrow points forward

8. Place the dihedral angle gauge on the main wing to make sure the dihedral angle is 15°

9. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑥ and ⑦ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑥ and ⑦ securely to the fuselage.

Camber the wings slightly

15°

15°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑥ together.

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑮.

5. Glue the horizontal stabilizer ⑭ to the fuselage

6. Assemble the main wing following the assembly instructions on page 36.

7. Glue the main wing firmly to the fuselage.

Arrow points forward

8. Place the dihedral angle gauge on the main wing to make sure the dihedral angle is 15°

9. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑦ and ⑧ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑦ and ⑧ securely to the fuselage.

Camber the wings slightly

15°

15°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑤ together.

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑭.

5. Glue the horizontal stabilizer ⑬ to the fuselage.

6. Assemble the main wing following the assembly instructions on page 36

7. Glue the main wing firmly to the fuselage.

Arrow points forward

8. Place the dihedral angle gauge on the main wing to make sure the dihedral angle is 15°.

9. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑥ and ⑦ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑥ and ⑦ securely to the fuselage.

Camber the wings slightly.

15°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑥ together.

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑮.

5. Glue the horizontal stabilizer ⑭ to the top of the vertical stabilizer.

6. Assemble the main wing following the assembly instructions on page 36. (The dihedral angle is 13°.)

Arrow points forward

7. Glue the main wing firmly to the fuselage.

8. Place the dihedral angle gauge on the main wing to make sure the dihedral angle is 13°.

Arrow points forward

9. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑦ and ⑧ and stick them lightly to the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑦ and ⑧ securely to the fuselage.

Camber the wings slightly.

13°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

starting with step 0. The dihedral angle, however, must be 5°.

8. Place the dihedral angle gauge on the wing to make sure the dihedral angle is 5°.

7. Glue the middle part of the wing firmly to the fuselage

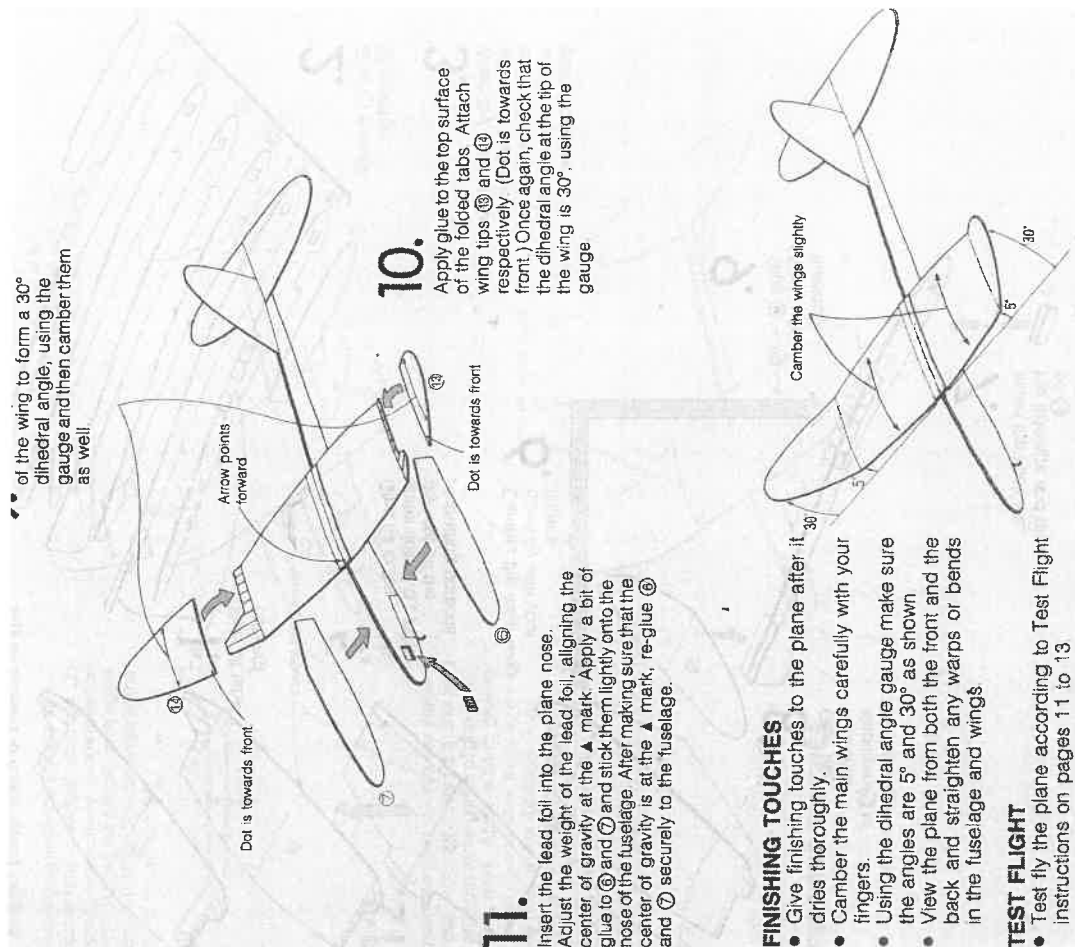
5. Glue the horizontal stabilizer ⑮ to the fuselage

1. Fold all tabs outward

2. Glue ① through ⑤ together

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑯

of the wing to form a 30° dihedral angle, using the gauge and then camber them as well.

10. Apply glue to the top surface of the folded tabs. Attach wing tips ⑬ and ⑭ respectively. (Dot is towards front.) Once again, check that the dihedral angle at the tip of the wing is 30°, using the gauge.

11. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑥ and ⑦ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑥ and ⑦ securely to the fuselage.

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- Using the dihedral angle gauge make sure the angles are 5° and 30° as shown
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13

slightly upward to make folding creases.

1. Fold all tabs outward

2. Glue ① through ⑥ together

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

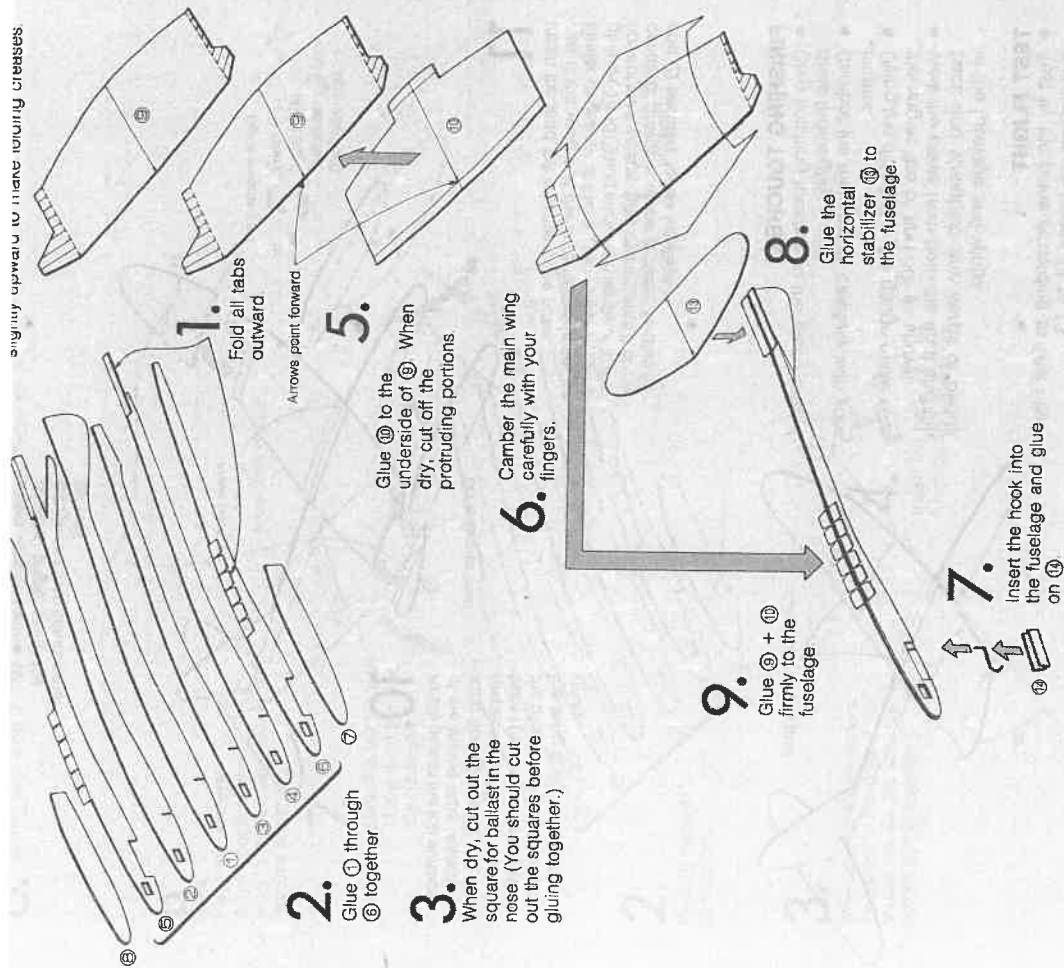
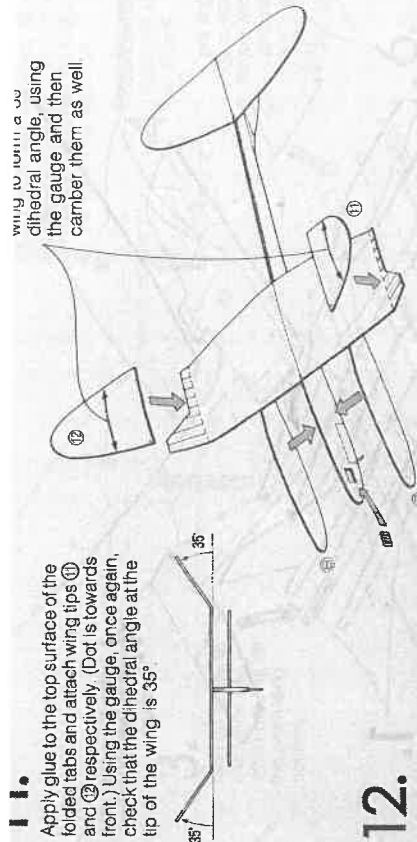
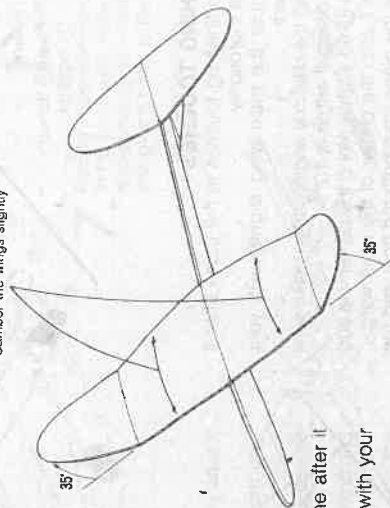
Arrows point forward

5. Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions.

6. Camber the main wing carefully with your fingers.

9. Glue ⑨ + ⑩ firmly to the fuselage

8. Glue the horizontal stabilizer ⑬ to the fuselage.

7. Insert the hook into the fuselage and glue on ⑭.

11. Apply glue to the top surface of the folded tabs and attach wing tips ⑪ and ⑫ respectively. (Dot is towards front.) Using the gauge, once again, check that the dihedral angle at the tip of the wing is 35°.

35° 35°

wing to form a 35 dihedral angle, using the gauge and then camber them as well.

12. Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑦ and ⑧ and stick them lightly to the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑦ and ⑧ securely to the fuselage.

Camber the wings slightly

35° 35°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑦ together.

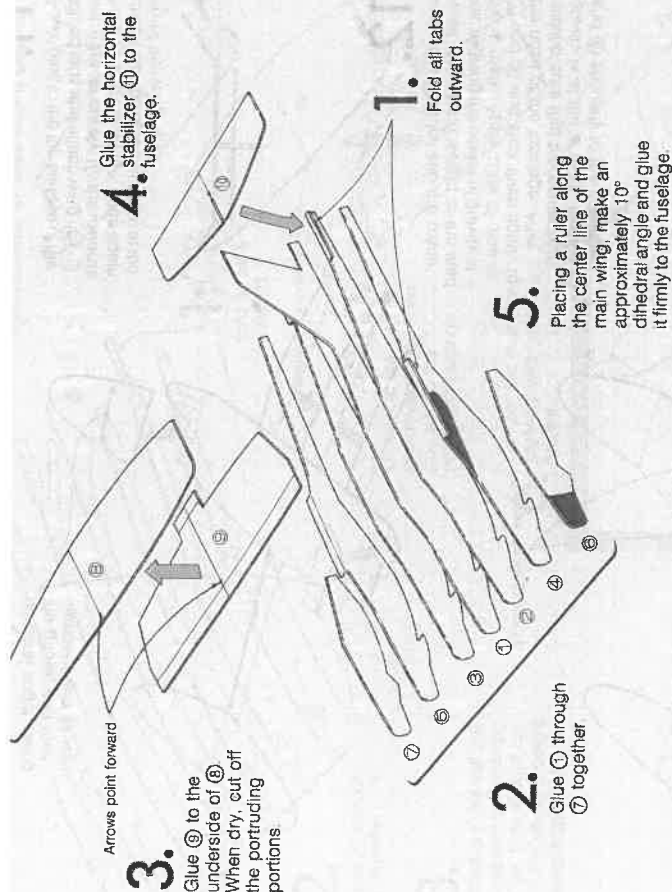
3. Glue ⑨ to the underside of ⑧. When dry, cut off the portruding portions.

Arrows point forward

4. Glue the horizontal stabilizer ⑪ to the fuselage.

5. Placing a ruler along the center line of the main wing, make an approximately 10° dihedral angle and glue it firmly to the fuselage.

Camber the wings slightly

10°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.

6. Camber the main wing slightly with your fingers.
7. Using the dihedral angle gauge make sure the dihedral angle is 10°.
8. Fold ⑪ up slightly along the center line and glue it onto the center of the main wing.
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

- No ballast is needed.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑦ together.

3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

Arrow points forward

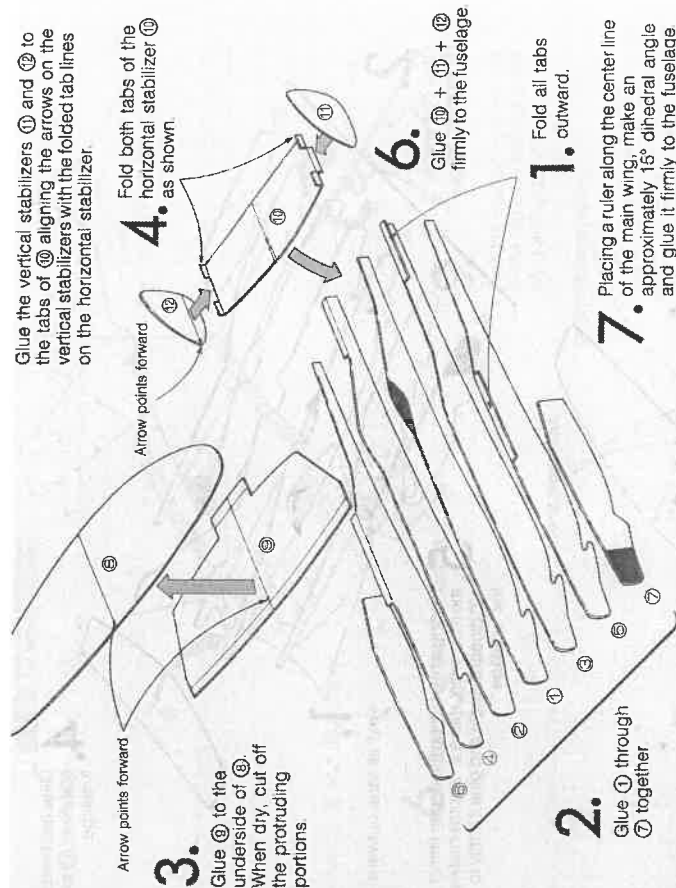
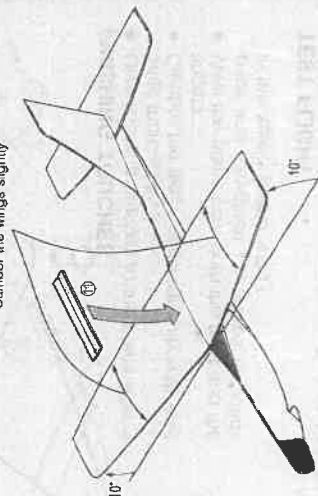
4. Fold both tabs of the horizontal stabilizer ⑩ as shown.

Glue the vertical stabilizers ⑪ and ⑫ to the tabs of ⑩ aligning the arrows on the vertical stabilizers with the folded tab lines on the horizontal stabilizer.

6. Glue ⑩ + ⑪ + ⑫ firmly to the fuselage.

7. Placing a ruler along the center line of the main wing, make an approximately 15° dihedral angle and glue it firmly to the fuselage.

Camber the wings slightly

15°

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.

8. Camber the main wings slightly with your fingers.
9. Using the dihedral angle gauge make sure the dihedral angle is 15°.
10. Fold ⑬ up slightly along the center line and glue it onto the center of the main wing.
11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

- No ballast is needed.

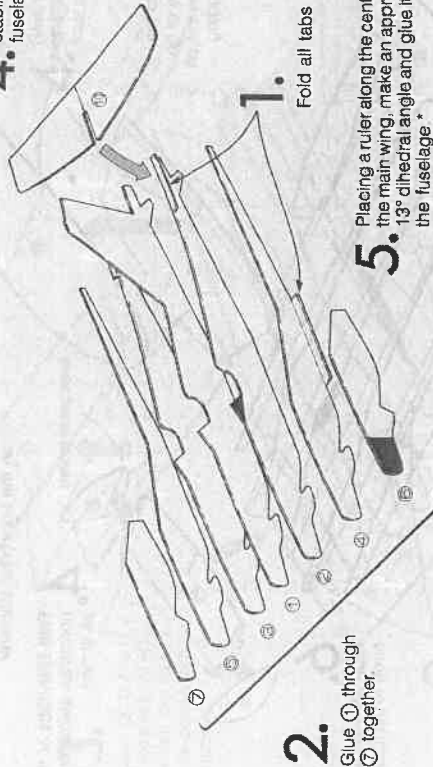
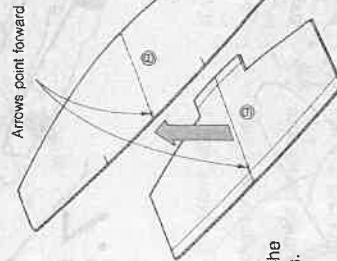
TEST FLIGHT

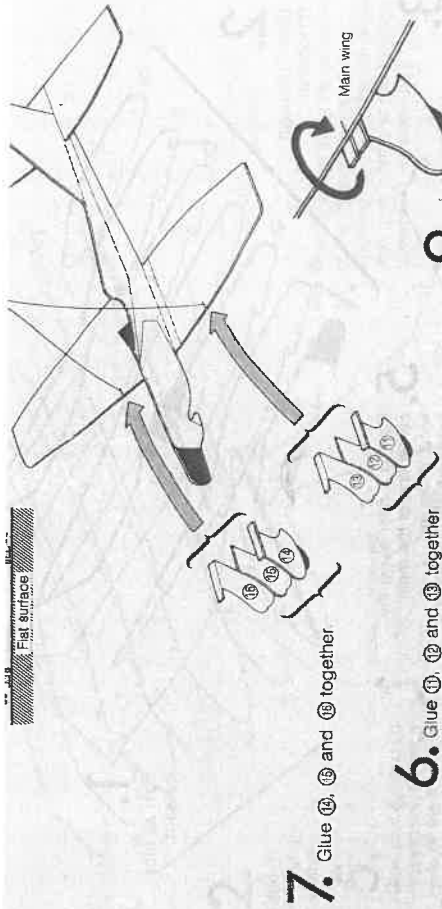
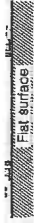
- Test fly the plane according to Test Flight instructions on pages 11 to 13.

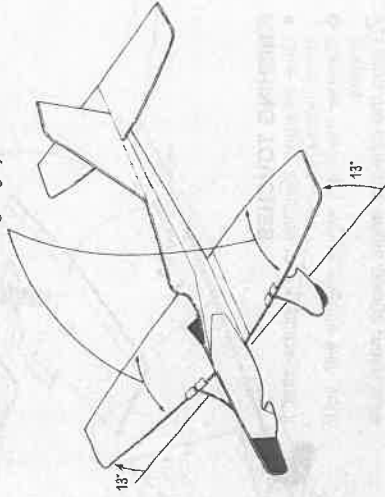
1. Fold all tabs outward.

2. Glue ① through ⑦ together.

3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

4. Glue the horizontal stabilizer ⑩ to the fuselage.

5. Placing a ruler along the center line of the main wing, make an approximately 13° dihedral angle and glue it firmly to the fuselage.*

***NOTE:**
You can find the center line of the bottom side of the main wing by folding it slightly. Alternatively, you can do this more precisely by making a pinhole at the either end of the center line on the top side of the main wing and then using the pinholes to draw the center line on the bottom side.

6. Glue ⑪, ⑫ and ⑬ together

7. Glue ⑭, ⑮ and ⑯ together

9. Fold the protruding front part of the tab over the top of the wing and glue on

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.

10. Camber the main wings slightly with your fingers.

11. Using the dihedral angle gauge make sure the dihedral angle is 13°.

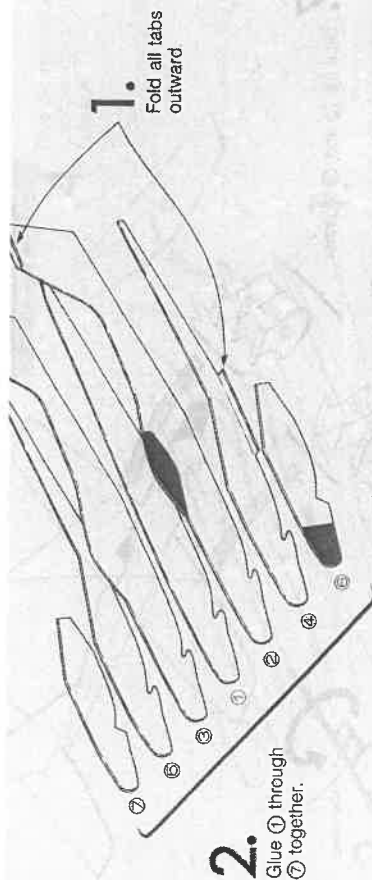
12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

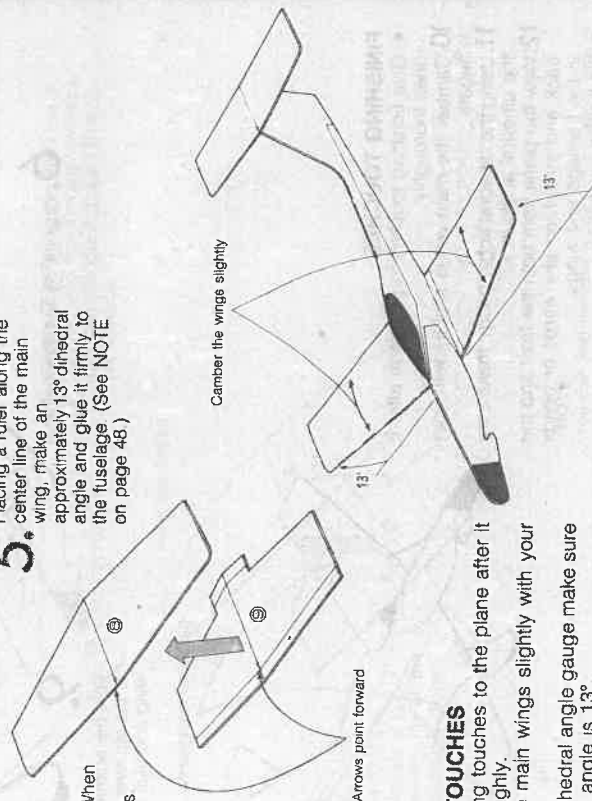
- No ballast is needed.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑦ together.

3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

5. Placing a ruler along the center line of the main wing, make an approximately 13° dihedral angle and glue it firmly to the fuselage. (See NOTE on page 48.)

FINISHING TOUCHES
- Give finishing touches to the plane after it dries thoroughly.

6. Camber the main wings slightly with your fingers.
7. Using the dihedral angle gauge make sure the dihedral angle is 13°.
8. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

- No ballast is needed.

TEST FLIGHT
- Test fly the plane according to Test Flight instructions on pages 11 to 13.

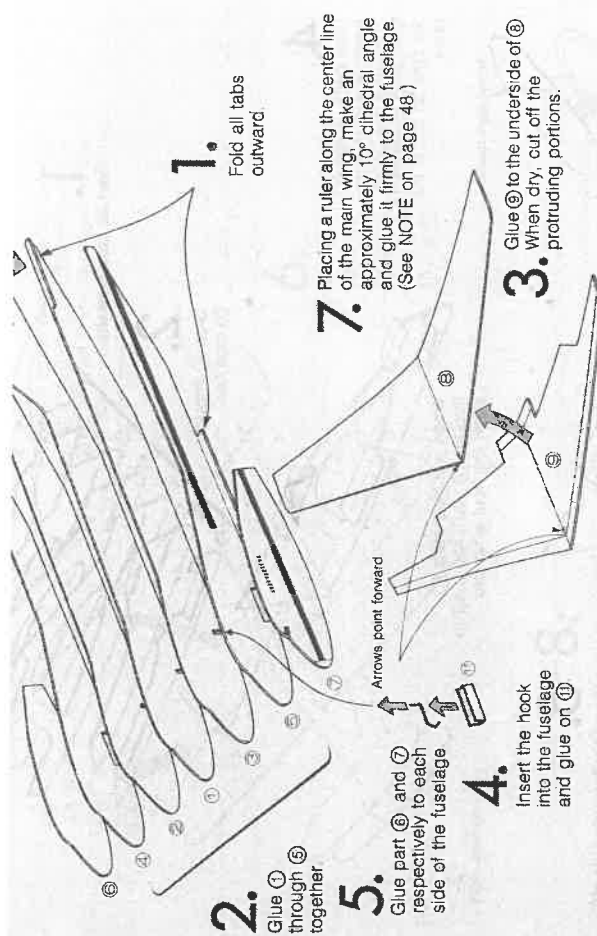
1. Fold all tabs outward.

2. Glue ① through ⑤ together.

5. Glue part ⑥ and ⑦ respectively to each side of the fuselage.

4. Insert the hook into the fuselage and glue on ⑪.

7. Placing a ruler along the center line of the main wing, make an approximately 10° dihedral angle and glue it firmly to the fuselage. (See NOTE on page 48.)

3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

FINISHING TOUCHES
- Give finishing touches to the plane after it dries thoroughly.

8. Camber the main wings slightly with your fingers.
9. Using the dihedral angle gauge make sure the dihedral angle is 10°.
10. Using the dihedral angle gauge, make a dihedral angle of 7° on the horizontal stabilizer.
11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

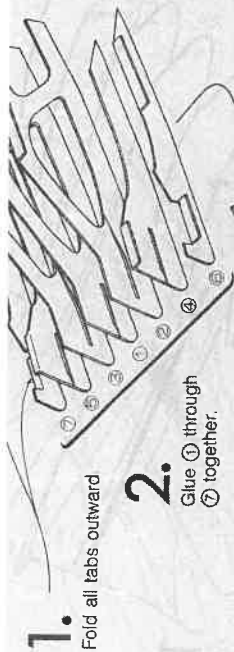
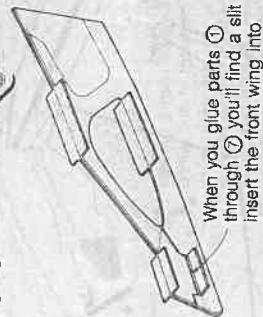
- No ballast is needed.

TEST FLIGHT
- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Fold all tabs outward.

2. Glue ① through ⑦ together.

When you glue parts ① through ⑦ you'll find a slit to insert the front wing into

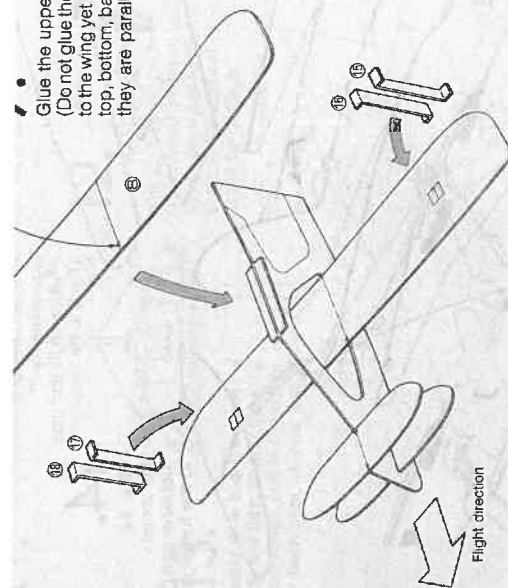
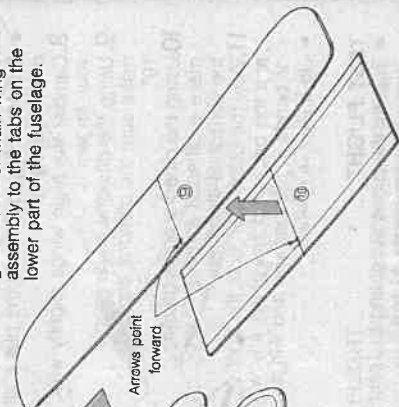
3. Glue parts ⑬ and ⑭ together with ⑬ on top. Insert this lower front wing assembly into the slit in the nose of the plane and glue it in place.

4. Glue parts ⑪ and ⑫ together with ⑪ on top. Then glue this upper front wing assembly to the tabs on top of the nose.

Arrows point forward

Arrows point forward

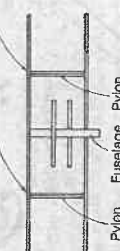
Arrows point forward

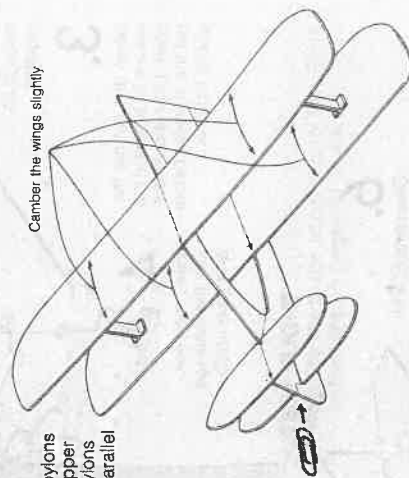
Flight direction

5. Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions. Then glue this lower main wing assembly to the tabs on the lower part of the fuselage.

6. Glue ⑮ and ⑯ together to make a pylon and glue the bottom of the pylon to the ▭ mark in the middle of the wing. Do the same with parts ⑰ and ⑱.

7. Glue the upper wing ⑧ to the fuselage. (Do not glue the upper part of the pylons to the wing yet.) View the wings from the top, bottom, back and front and make sure they are parallel.

Flight direction

8. Glue the top part of the pylons to the underside of the upper wing. Make sure the pylons and the fuselage are parallel as shown.

Pylon Fuselage Pylon

Camber the wings slightly

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.

9. Camber the main wing slightly with your fingers.
10. The dihedral angle is not needed.
11. When you fly this FLYER outdoors, attach one or two of the included paper clips on the plane nose. Make sure the center of gravity is at ▲ mark. When you fly it indoors, it's better to attach no clips to have floating and longer flights.
12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

- No ballast is needed.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13 (Canard model). This plane is not suitable for catapult launch so always launch by hand.

5. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

...wing and make an approximately 7° dihedral angle and glue it firmly to the fuselage.

14. Glue the horizontal stabilizer part ⑩ to the fuselage.

1. Fold all tabs outward.

2. Glue ① through ⑤ together.

3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑰.

6. Glue parts ⑪ and ⑫ together with ⑪ on top. Then bend the assembled piece along the center line as shown.

7. Glue ⑪ + ⑫ to the tab at the bottom of the plane.

9. Attach the top part of the gear, ⑬ + ⑭ to the ○ mark on the body.

8. Glue left gear parts ⑬ and ⑭ together and bend the assembled piece into the shape shown.

10. Assemble and place the right gear using parts ⑮ and ⑯ in the same manner as ⑬ and ⑭.

11. ... + ⑫ and make the required angle of 20° as shown.

12. Bend the gear parts ⑬ + ⑭ and ⑮ + ⑯ respectively at points A and B on both sides so that each part forms a 90° angle at the base with respect to the flat surface.

13. Apply glue to the outsides of the two tabs of part ⑪ + ⑫ and attach one to the inside of each gear as indicated.

16. Insert the lead foil into the plane nose. Adjust the weight of lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ⑥ and ⑦ and stick them lightly to the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ⑥ and ⑦ securely to the fuselage.

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.

17. Camber the main wing slightly with your fingers.
18. Using the dihedral angle gauge make sure the dihedral angle is 7°.
19. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

1. Glue ① and ② together and let it dry.

2. Cut out the two slits into which the wing and the horizontal stabilizer will be inserted.

4. Glue ③ and ④ onto each side of the body ①+② so that the slits are not covered by parts ③ and ④. Furthermore, the top edges of ③ and ④ should be flat with that of ① + ②.

3. Apply a ruler along the dashed line of ③ and bend the tab outward. Do the same with part ④.

7. Turn the fuselage upside-down. Then apply glue on the tabs only along the rear slit (See figure) and bend these tabs so that the horizontal stabilizer (printed side up), when inserted into the slit, does not touch the glue except in the center. Fixing the center part of the horizontal stabilizer to the body, glue it in place.

8. Insert and glue the main wing to the body in the same way as with the horizontal stabilizer except this time, with printed side down, so that logo is visible when plane is flown. Again, use the pinholes as the center guide.

5. Glue ⑫ to the underside of ⑪. When dry, cut off the protruding portions.

6. Make pinholes through the center guidelines so that you can find the center from the underside of the wing.

Center guidelines: When the main wing is inserted into the fuselage, find the center part of the wing using these center guidelines.

9. Place a ruler along the dashed line of part ⑤ and bend it outward. Do the same with part ⑥.

10. Glue ⑤ and ⑥ respectively to each side of the fuselage.

11. Glue parts ⑦ to ⑩ to the fuselage.

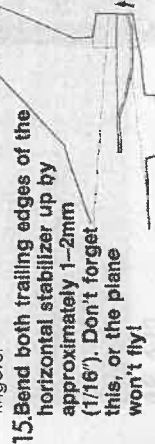
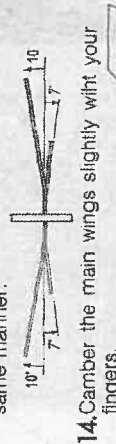
12. Insert the hook into the fuselage and glue on ⑭.

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.

13. Using a ruler, make the dihedral angle 10° on the main wing at the end of the flat tab where not glued. Make a dihedral angle of minus 7° on the horizontal stabilizer in the same manner.

14. Camber the main wings slightly wiht your fingers.

15. **Bend both trailing edges of the horizontal stabilizer up by approximately 1–2mm (1/16"). Don't forget this, or the plane won't fly!**

16. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.
- If your plane tends to dive down or if it flies upside-down when flying upwards, the reason might be because of insufficient bending at the trailing edges of the horizontal stabilizer so keep bending the part just a fraction more until you get a straight flight.

Arrow points forward.

⑫

Dots are towards front.

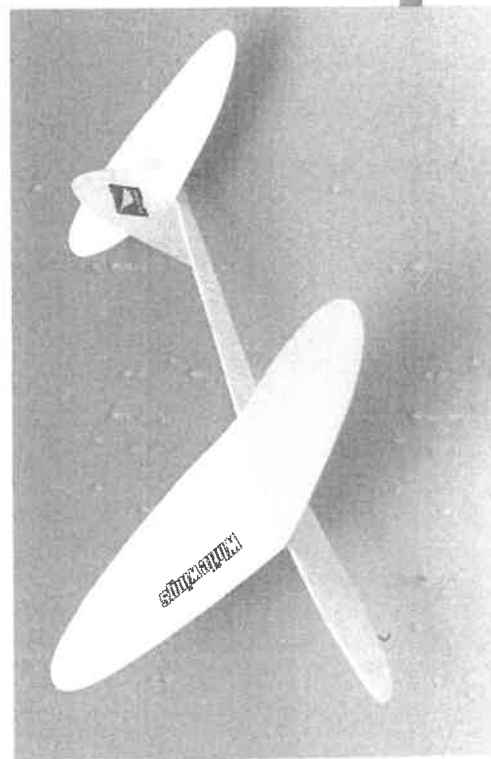
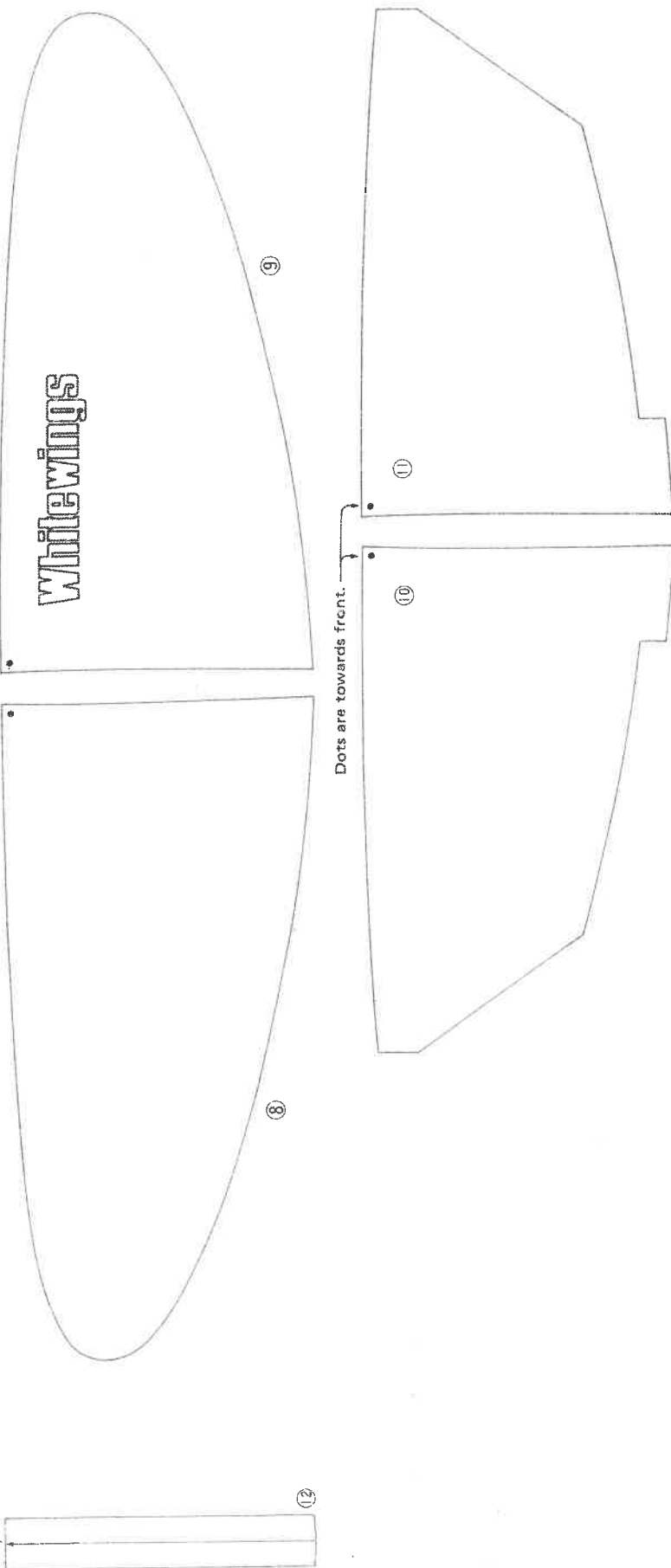
⑧

Whitewings

⑨

Dots are towards front.

⑩

⑪

Whitewings®

Racer 512 Finch

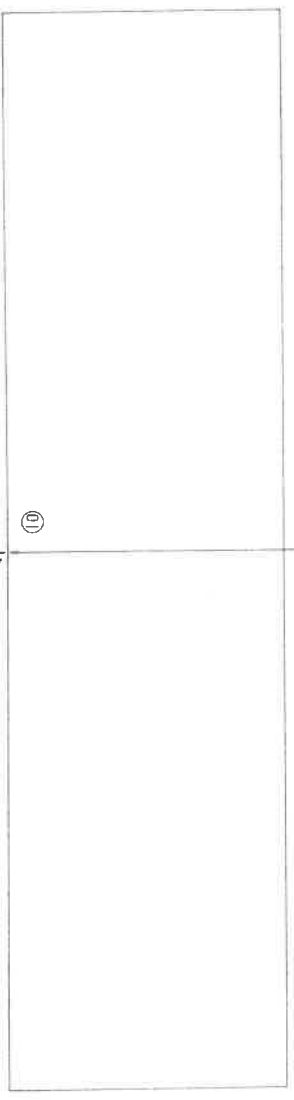
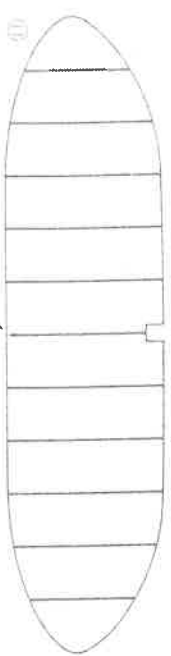
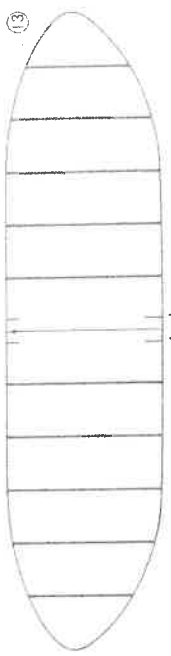
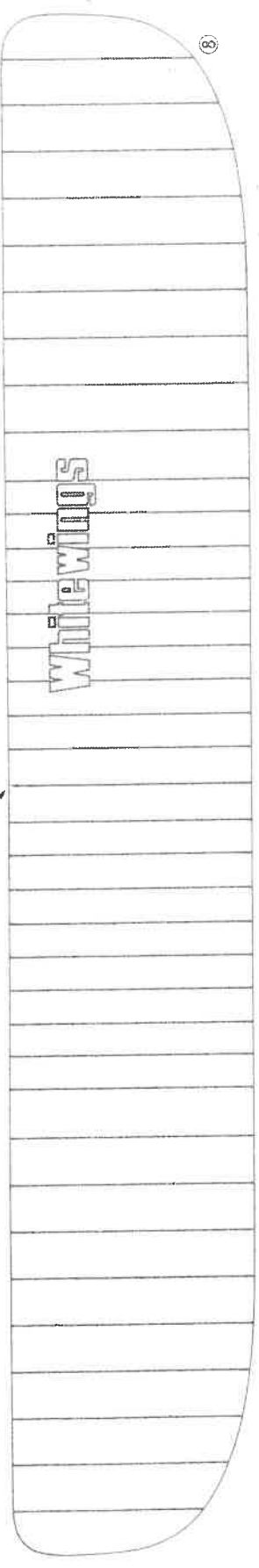
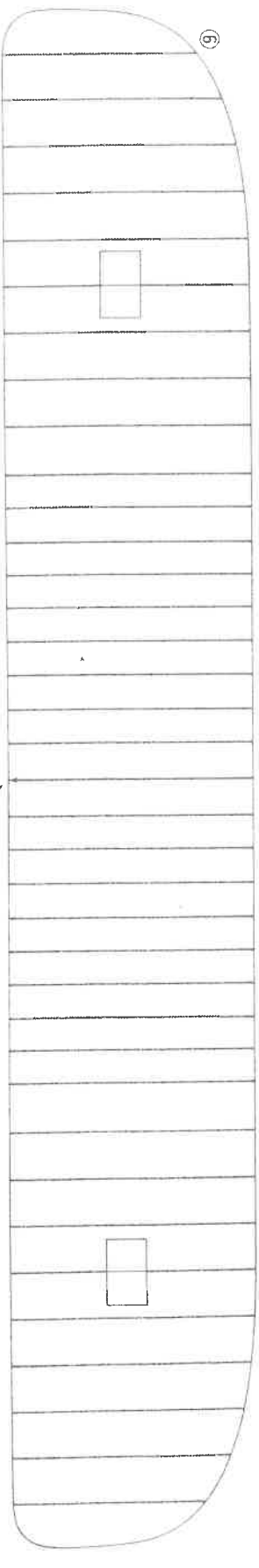
----- Fold with dashed line inside.

↑ Arrows point forward.

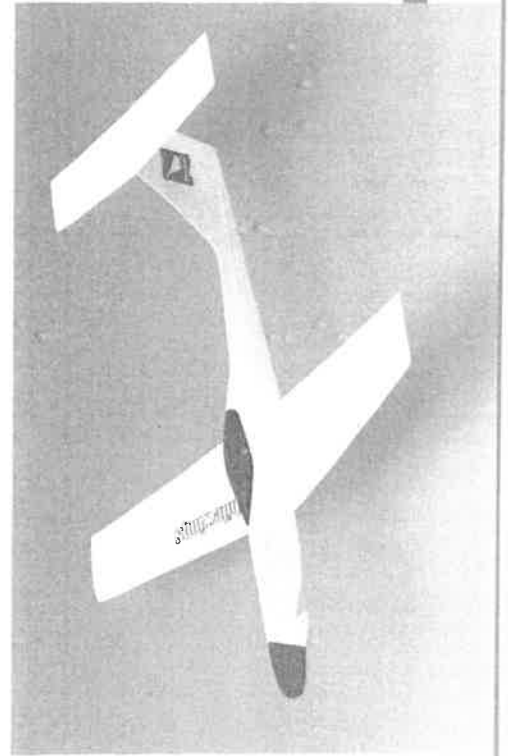
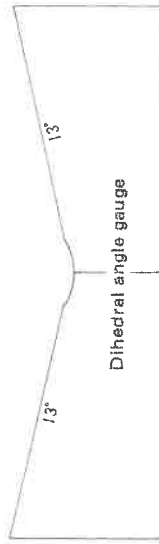
③
⑭
White wings
①
④
②

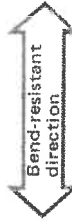
Whitewings® General Dynamics F-16 FIGHTING FALCON

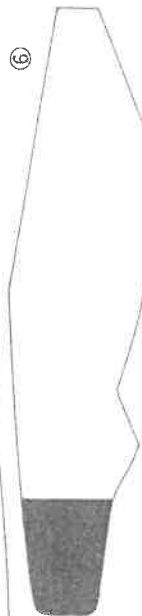
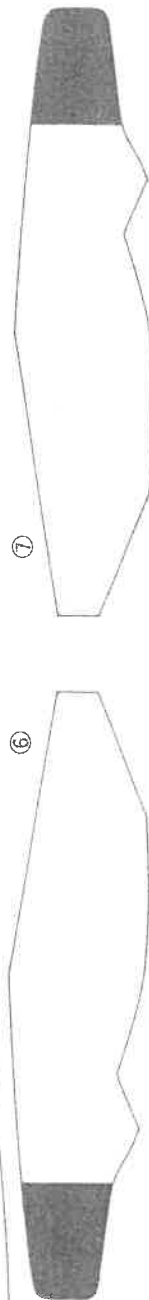
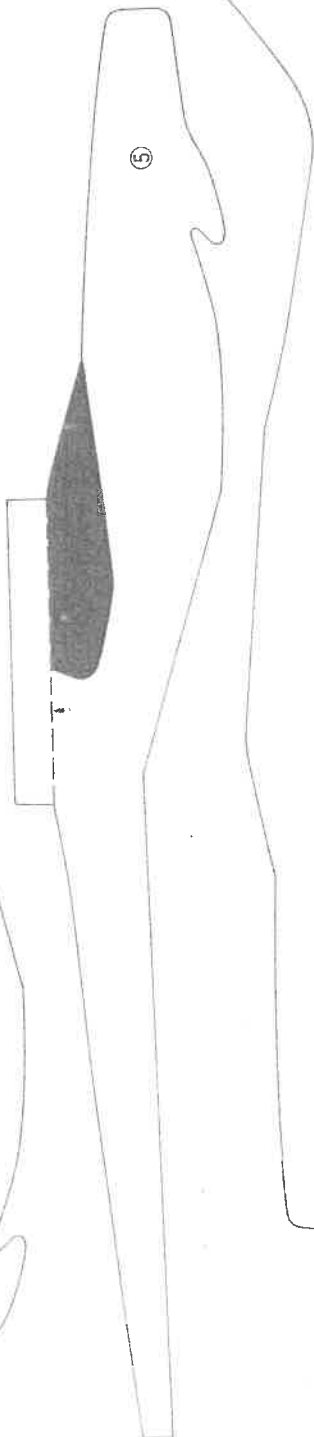
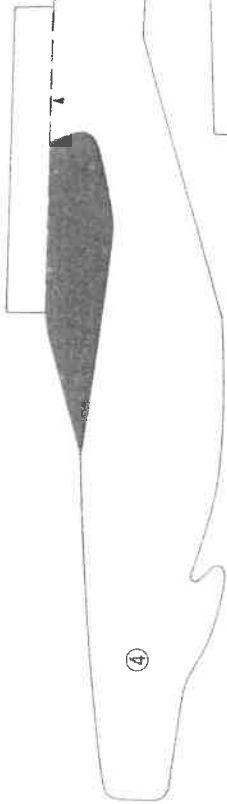
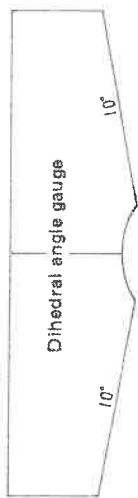
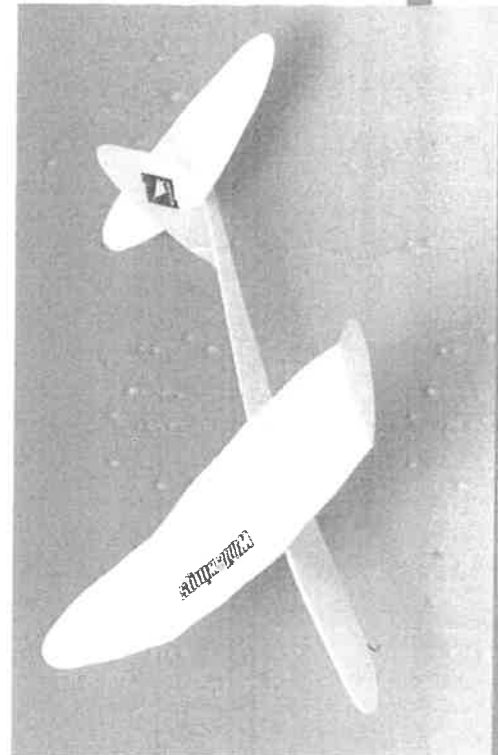
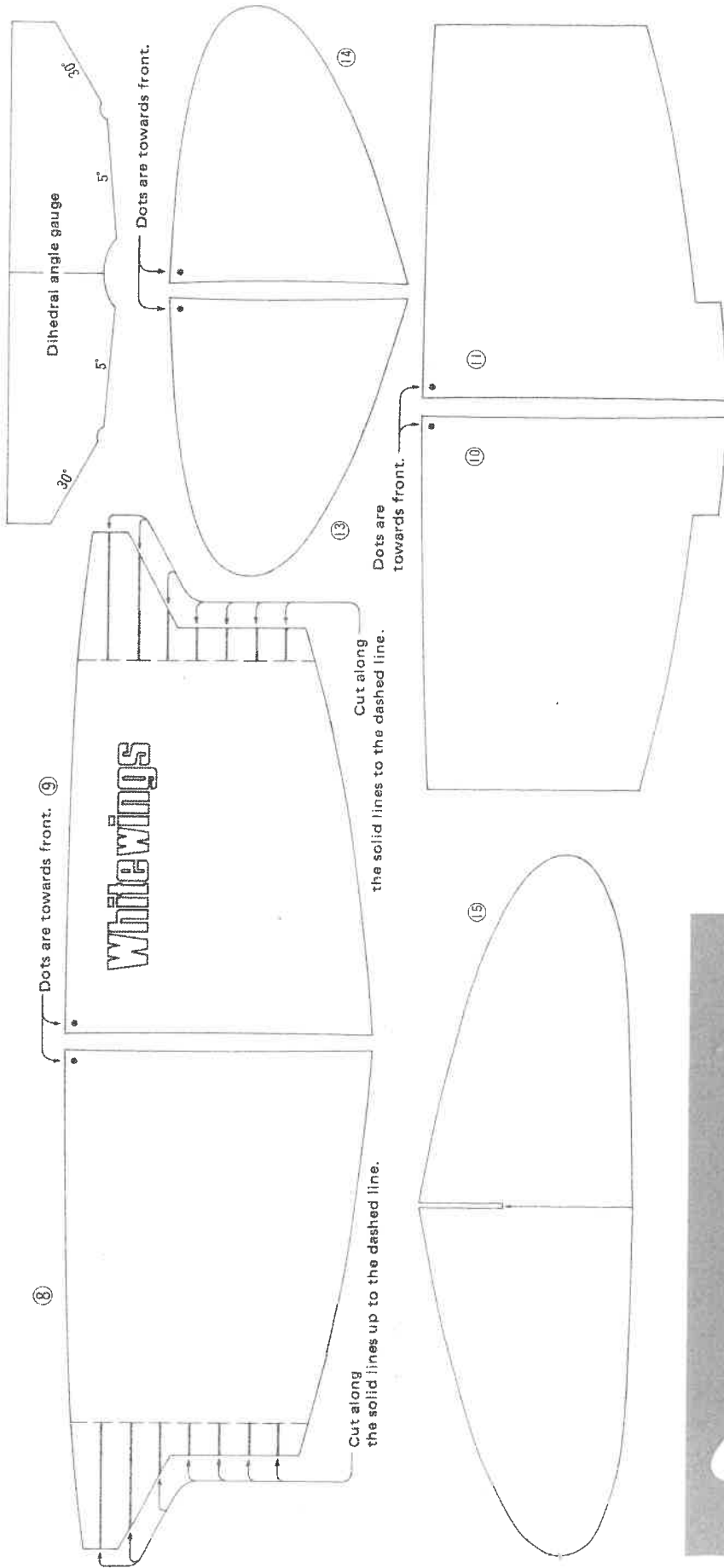
Weight hole
③
⑰
Weight hole
②
White wings
Weight hole
①
⑥
THE WINNIE MAE OF OKLAHOMA
Weight hole
⑤
⑦
Arrow points forward.
⑪
Arrow points forward.
⑫
④

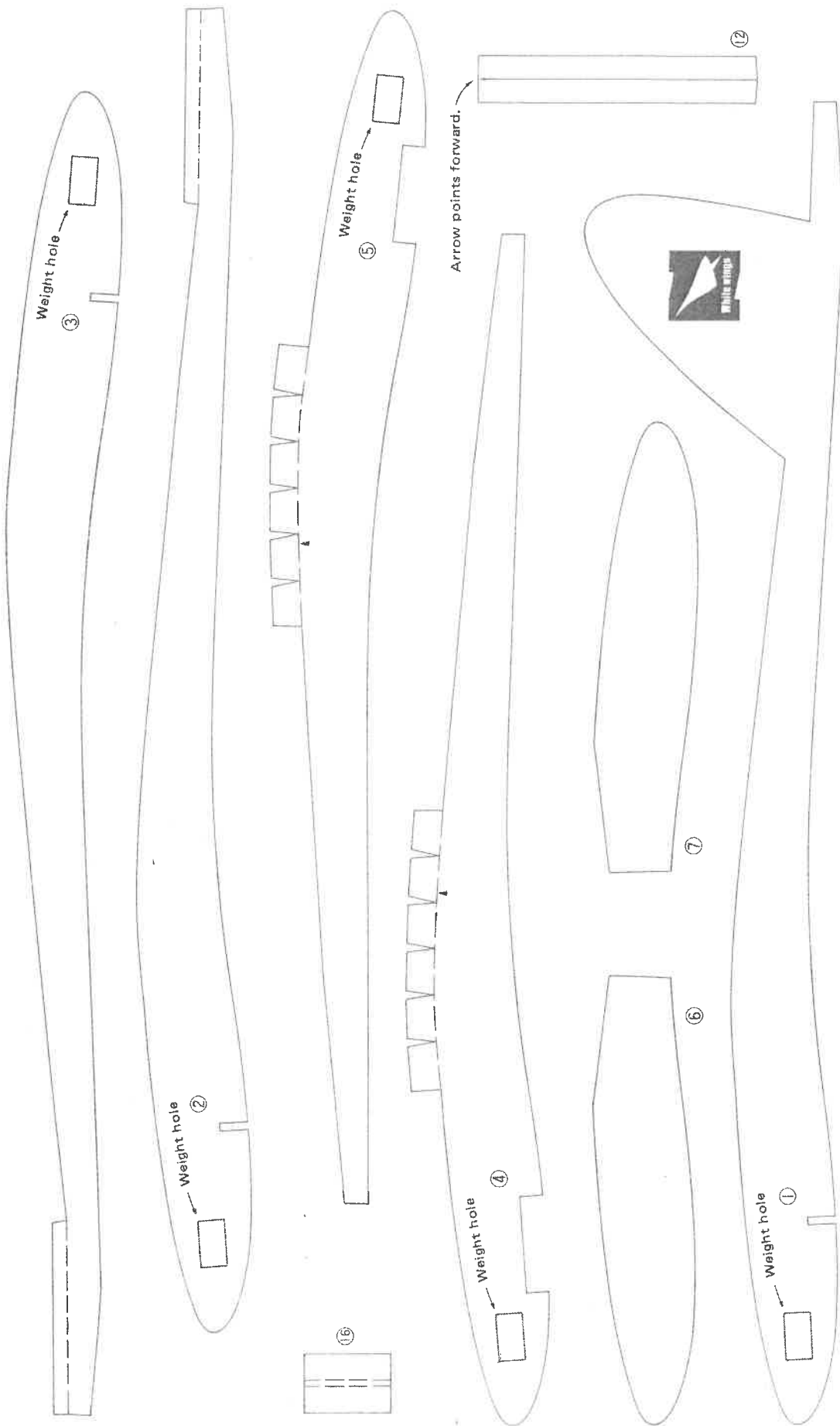
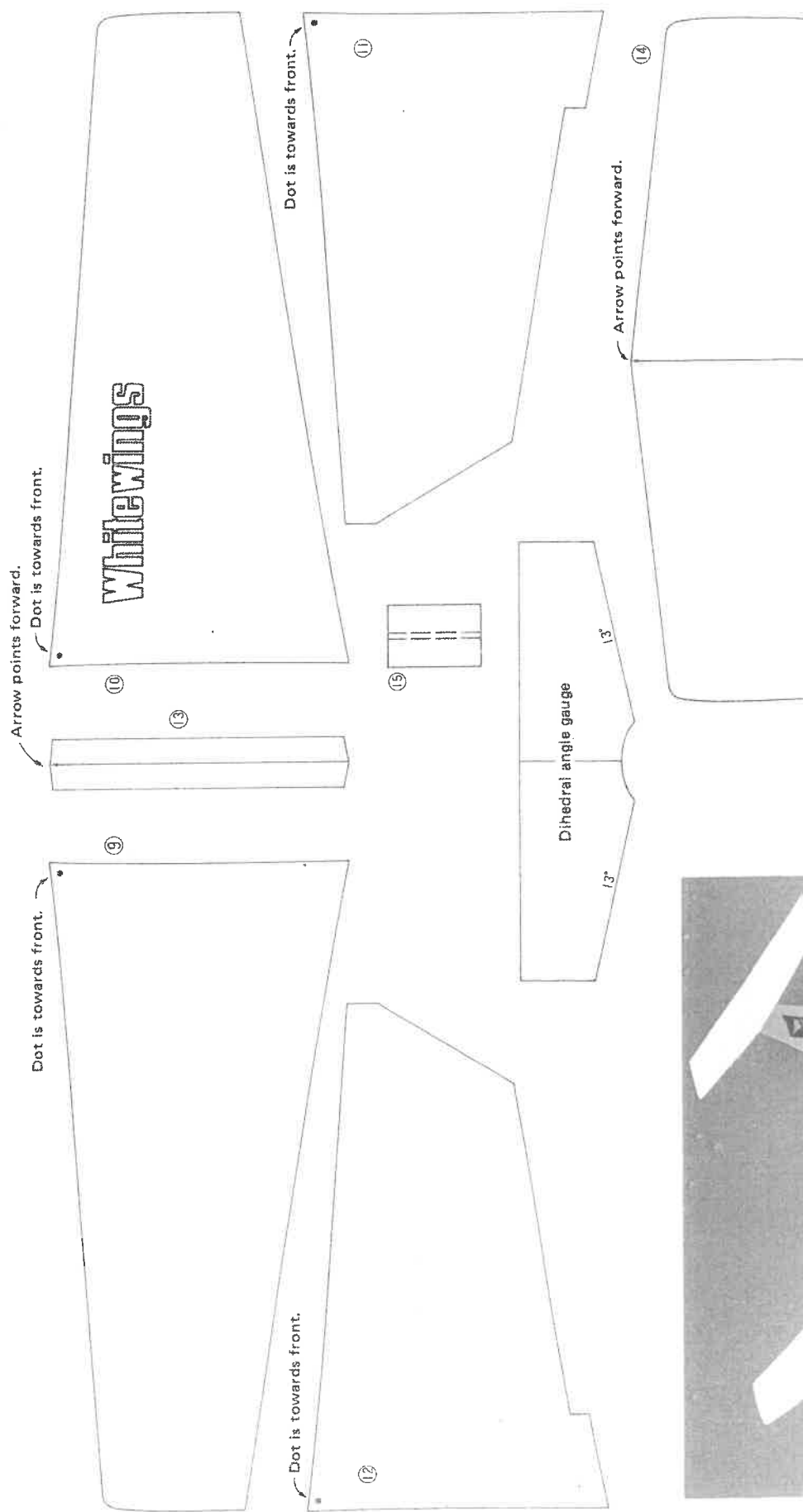
①
White wings
Cut this part out.
Cut this part out.
②
Cut this part out.
③
⑮
⑯
⑰
⑱

Arrow points forward.
⑩
Arrow points forward.
⑬
Center guidelines
Arrow points forward.
Whitewings
⑧
Arrow points forward.
⑨
Whitewings Wright FLYER
Arrows point forward.
Bend-resistant direction

③
⑤
⑧
Whitewings
Fold with dashed line inside.
Arrows point forward.
Arrow points forward.
⑩
Whitewings
Boeing 747
Bend-resistant direction

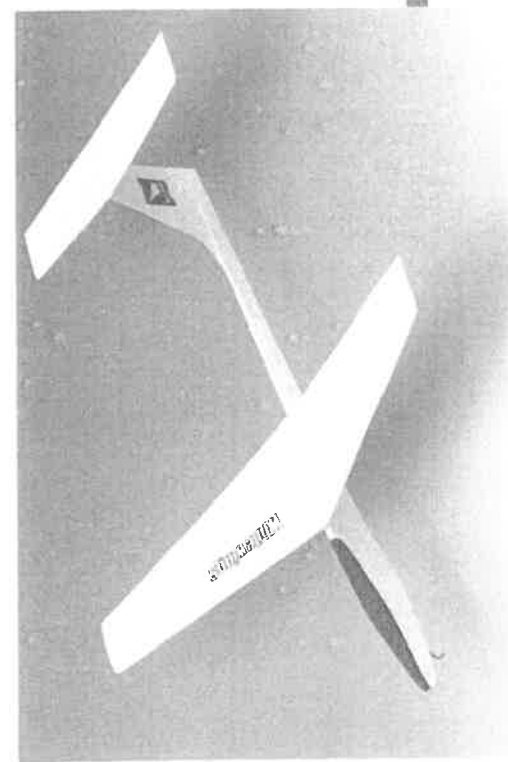
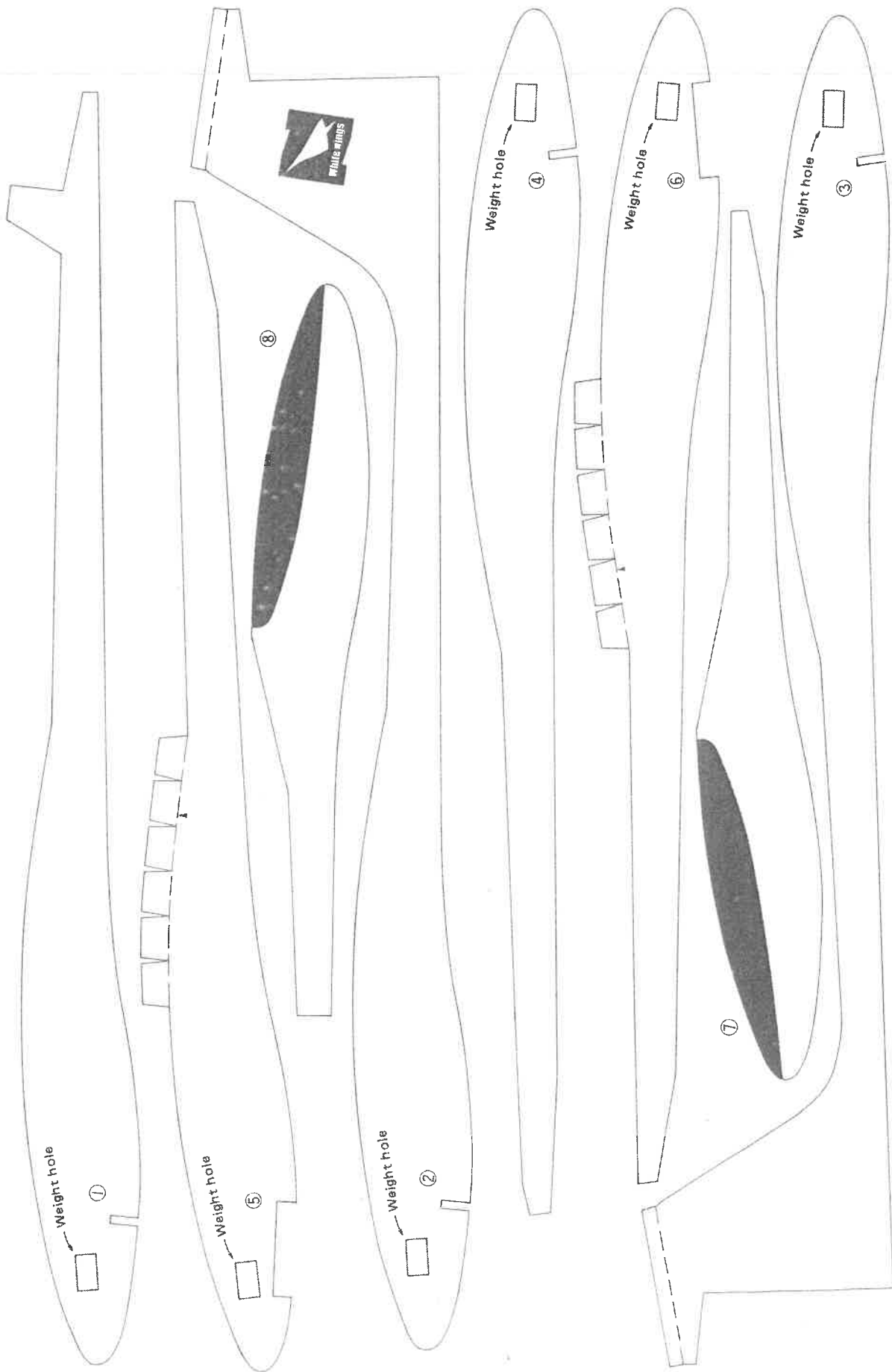
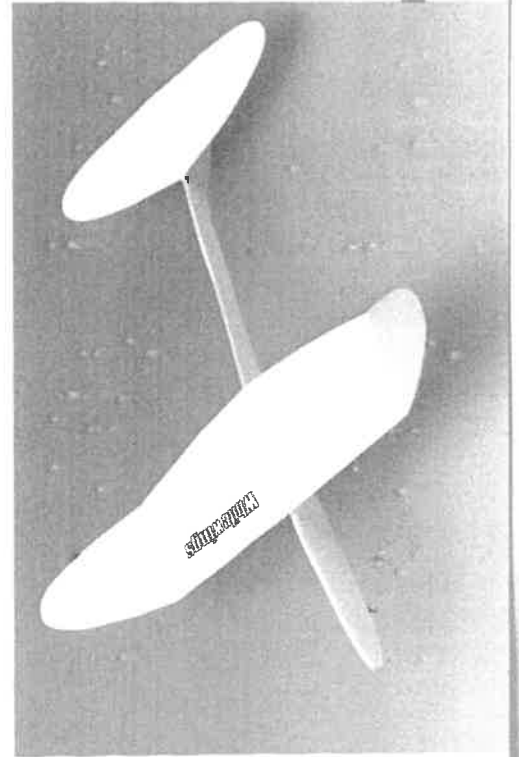
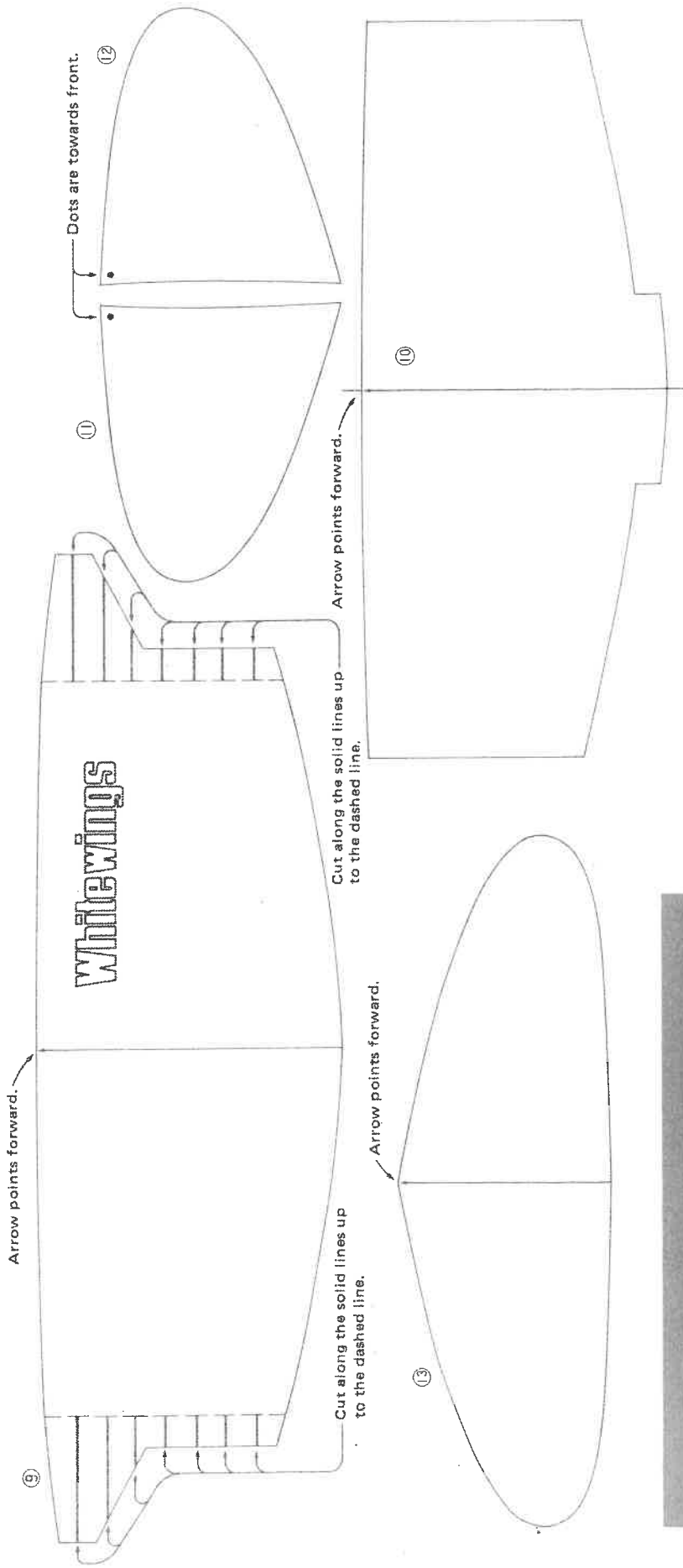
Main wing
10°
10°
Horizontal stabilizer
Dihedral angle gauge
7°
7°
⑨
Arrow points forward.
②
⑦
⑥
White Wings
①
⑪
④

Arrow points forward.
⑧
Whitewings
Arrow points forward.
⑨
Arrow points forward.
⑩
13°
13°
Dihedral angle gauge
Whitewings®
Light Plane 304 Thrasher
Fold with dashed line inside.
Arrows point forward.
Bend-resistant direction

White wings
⑫
⑥
⑦
⑮
①
②
⑩
⑤
③
④

③
②
①
⑦
White wings
⑤
⑥
④
⑪
⑫
Arrows point forward.
Dihedral angle gauge
15°
15°

Arrow points forward.
⑪
⑧
Arrow points forward.
Whitewings
Arrow points forward.
⑨
⑩
Whitewings
Light Plane 301 Flycatcher
Fold with dashed line inside.
Arrows point forward.
Bend-resistant direction
© 1986 Yasuaki Ninomiya (All rights reserved. Reproduction prohibited.)

Dihedral angle gauge
10°
10°
④
⑤
White wings
①
③
②
⑥
⑦

⑧
Dots are towards front. ⑨
Whitewings
Cut along
the solid lines up to the dashed line.
Cut along
the solid lines to the dashed line.
Dihedral angle gauge
30°
5°
5°
30°
Dots are towards front.
⑬
⑭
Dots are
towards front.
⑮
⑩
⑪
Whitewings
Racer 518 Cardinal
Fold with dashed line inside.
Arrows point forward.
Bend-resistant
direction

Weight hole
③
Weight hole
②
⑯
Weight hole
⑤
Weight hole
④
Arrow points forward.
⑥
⑦
White wings
⑫
Weight hole
①

Arrow points forward.
Dot is towards front.
Dot is towards front.
⑨
⑩
Whitewings
⑬
Dot is towards front.
Dot is towards front.
⑫
⑪
⑮
Dihedral angle gauge
13°
13°
Arrow points forward.
⑭
Whitewings®
Racer 517 Ptarmigan
Fold with dashed line inside.
Arrows point forward.
Bend-resistant direction

Weight hole
①
Weight hole
⑤
⑧
White Wings
Weight hole
②
Weight hole
④
Weight hole
⑥
⑦
Weight hole
③

⑨
Arrow points forward.
Whitewings
Cut along the solid lines up to the dashed line.
Cut along the solid lines up to the dashed line.
Dots are towards front.
⑪
⑫
Arrow points forward.
⑩
Arrow points forward.
⑬
Whitewings
Whitewings®
Racer 516 Mockingbird
Fold with dashed line inside.
Arrows point forward.
Bend-resistant direction

Weight hole
④
Weight hole
①
Weight hole
③
Weight hole
②
Weight hole
⑥
⑭
Weight hole
⑤
Dihedral angle gauge
35°
⑦
⑧

Weight hole
②
Weight hole
③
⑥
Dihedral angle gauge
15°
15°
⑦
White wings
Weight hole
①
⑭
Weight hole
⑤
Weight hole
④

Weight hole
③
Weight hole
④
⑦
Dihedral angle gauge
15°
15°
⑧
White wings
Weight hole
①
Weight hole
②
⑮
Weight hole
⑥
Weight hole
⑤

Arrow points forward.

⑫

Dots are towards front.

⑧

⑨

Whitewings

Dots are towards front.

⑩

⑪

- - - - - Fold with dashed line inside.

↑ Arrows point forward.

Whitewings®

Racer 513 Meadowlark

Weight hole
3
Weight hole
1
Weight hole
4
Weight hole
5
2
Weight hole
6
7
Arrow points forward.
13
14
Dihedral angle gauge
15°
15°